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## (54) Drain with inspection hole

(57) The invention relates to a drain, comprising:
- a first chamber with an inflow opening on the upper side;
- a second chamber placed adjacently of the first chamber, which second chamber is in liquid connection on the underside with the first chamber and wherein an outflow opening is arranged close to the upper side of the second chamber, wherein at least a top part of the upper side of the second chamber, with a sealable inspection hole arranged therein, lies at substantially the same height as the inflow opening in the upper side of the first chamber.

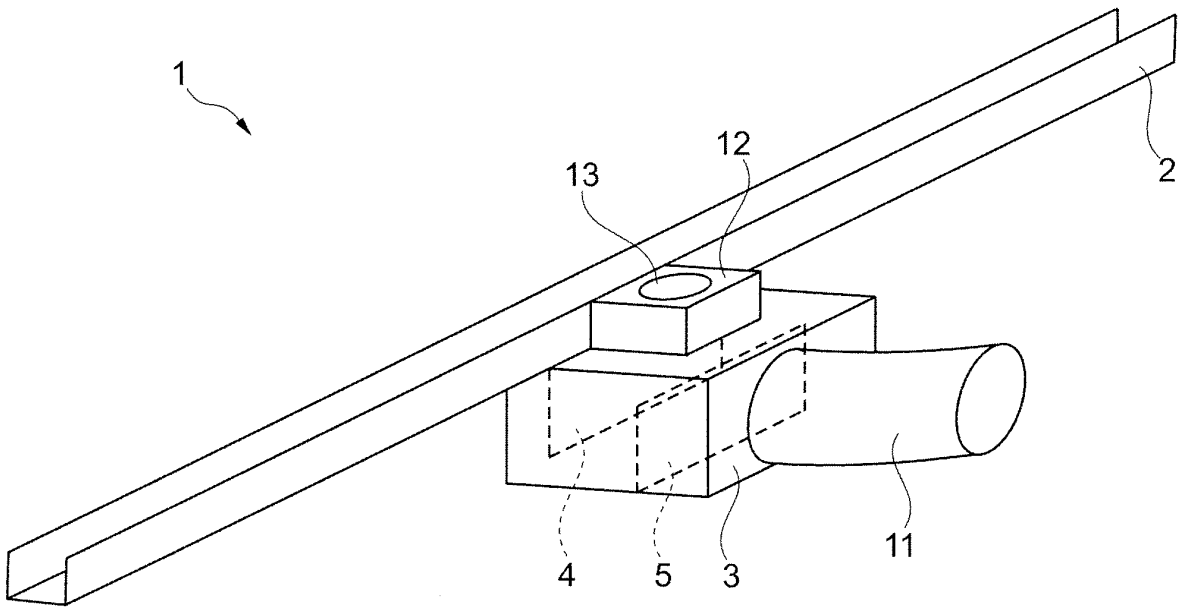


Fig. 1

EP 2 216 449 A1

## Description

**[0001]** The invention relates to a drain comprising:

- a first chamber with an inflow opening on the upper side;
- a second chamber placed adjacently of the first chamber, which second chamber is in liquid connection on the underside with the first chamber and wherein an outflow opening is arranged close to the upper side of the second chamber.

**[0002]** In such prior art drains the two chambers form a siphon or air trap to prevent stench from the outflow opening. It is known that the drain can be disassembled to enable cleaning in such a drain of the outflow opening and the outlet pipe lying therebehind. The removable part of such drains usually comprises a part which can be removed via the inflow opening. This removable part forms a part of the second chamber so that, after removal, access can be gained via the inflow opening to the outflow opening.

**[0003]** The trend in drains, in particular for shower spaces, is for the inflow opening to become increasingly small and narrow so that the part of the drain visible in the floor becomes increasingly small. The removable part must therefore be correspondingly smaller, whereby the access to the outflow opening becomes increasingly more difficult.

**[0004]** Particularly in the case of elongate shower drains the trend is for the width of the shower drain to become increasingly small, wherein widths of less than two centimetres are not unusual. In such embodiments the possibility of cleaning and accessing the outflow opening is now not available since there is no good solution for making this possible.

**[0005]** It is now an object of the invention to provide a drain wherein the above stated drawbacks are obviated as far as possible.

**[0006]** This object is achieved according to the invention with a drain according to the preamble, which is **characterized in that** at least a top part of the upper side of the second chamber, with a sealable inspection hole arranged therein, lies at substantially the same height as the inflow opening in the upper side of the first chamber.

**[0007]** Since the top part of the upper side of the second chamber lies at substantially the same height as the inflow opening, the sealable inspection hole lies adjacently of the inflow opening in the invention. The dimensions of the inspection hole are hereby no longer determined by the dimensions of the inflow opening. It is thus possible to design the inflow opening as desired, and good access can simultaneously be obtained via the sealable inspection hole.

**[0008]** In a preferred embodiment of the invention the first chamber comprises an elongate gutter, wherein the inflow opening is formed by the peripheral edge of the elongate gutter. It is not necessary here for the first chamber to have the same height over the full length of the gutter. The first chamber has a maximum height particularly at the position of the second chamber.

**[0009]** In another embodiment of the invention the dividing wall between the first chamber and the second chamber can be removed together with the top part in order to provide an inspection hole.

**[0010]** In another preferred embodiment of the invention an outlet pipe protrudes into the second chamber, which outlet pipe is sealed on the end surface and comprises the outflow opening of the second chamber in the peripheral wall.

**[0011]** This embodiment has the advantage that a structurally very simple drain results. The outflow opening is preferably arranged in an upward facing part of the peripheral wall.

**[0012]** In another embodiment an adjusting frame is arranged in the inflow opening. Using this adjusting frame the upper edge of the inflow opening can be made flush with for instance the upper surface of a tile layer on the floor in which the drain is arranged. Because the second chamber is arranged adjacently of the first chamber with inflow opening, the adjusting frame can be recessed at least partially into the first chamber, whereby the height of the first and second chambers can be minimized.

**[0013]** The adjusting frame preferably extends over the inspection hole. The height of the wholly visible part of the drain can hereby be adjusted to the surrounding floor.

**[0014]** The invention further comprises a floor with a drain according to the invention arranged therein, wherein the inflow opening and the part with the inspection hole lie substantially flush with the upper surface of the floor.

**[0015]** In a preferred embodiment of the floor according to the invention the drain lies against a wall and tiles arranged on the wall stand on an edge of the inflow opening. The inflow opening is hereby formed in a shower space in a transition between the floor and a wall, whereby it is substantially concealed from view.

**[0016]** These and other features of the invention are further elucidated with reference to the accompanying drawings.

**[0017]** Figure 1 shows a perspective view of a first embodiment of a drain according to the invention.

**[0018]** Figure 2 shows a cross-sectional view of the embodiment according to figure 1.

**[0019]** Figure 3 shows a cross-sectional view of a second embodiment according to the invention.

**[0020]** Figure 4 shows a third embodiment according to the invention.

**[0021]** Figure 5 shows a cross-sectional view of a fourth embodiment according to the invention.

**[0022]** Figure 1 shows a first embodiment 1 of a drain according to the invention. This drain 1 has an elongate gutter 2 of substantially U-shaped cross-section. This elongate gutter 2 forms the inflow opening for drain 1.

**[0023]** This elongate gutter 2 forms part of a housing 3. Formed in this housing 3 are a downward hanging

baffle 4 and a baffle 5 standing upright from the bottom (see also figure 2). Baffle 4 and housing 3 form a first chamber 6 and baffle 4, baffle 5 and housing 3 form a second chamber 7.

**[0024]** First chamber 6 and second chamber 7 are in mutual liquid connection via passage 8 under downward hanging baffle 4. The passage 9 over upright baffle 5 is the outflow opening along which liquid flows into a collection chamber 10, after which it can flow into outlet pipe 11.

**[0025]** The upper side 12 of housing 3 is partially raised above second chamber 7. Provided in this raised upper side 12 is an inspection hole in which a sealing cap 13 is provided.

**[0026]** The height of upper side 12 of housing 3 is substantially equal to the height of the inflow opening of elongate gutter 2. When drain 1 is incorporated into a floor, the upper surface of for instance tiles 14 will lie at this same height.

**[0027]** Figure 3 shows a second embodiment of a drain 20 according to the invention. This drain 20 also has an elongate gutter 21 which forms part of a housing 22. Arranged in housing 22 is a downward hanging baffle 23 whereby housing 22 is divided into a first chamber 24 and a second chamber 25. Upper side 26 of second chamber 25 lies at the same height as the inflow opening of gutter 21. An inspection hole sealed by a sealing cap 27 is again provided in this upper side 26.

**[0028]** An outlet pipe 28, the end surface 29 of which is sealed, protrudes into second chamber 25. On the upper side of outlet pipe 28 a part of the peripheral wall has been removed so that an outflow opening 30 for second chamber 25 is formed.

**[0029]** Water W flowing into first chamber 24 via gutter 21 will flow under downward hanging baffle 23 and then flow upward on either side of the outlet pipe 28 protruding into second chamber 25, and subsequently leave drain 20 via outflow opening 30.

**[0030]** Figure 4 shows a third embodiment 40 according to the invention. Drain 40 has a housing 41 to which an outlet pipe 42 is coupled. An upright wall 43 is placed in housing 41. A removable wall part 44 further hangs downward from the upper side.

**[0031]** A first chamber 45 is formed between a side wall of housing 41 and removable wall part 44 and a second chamber 46 is formed between wall part 44 and upright wall 43.

**[0032]** Upper side 47 of the side wall is bent so that tiles 48 can be placed thereon. Inflow opening 49 of this drain 40 is formed by the bent upper side 47 and removable wall part 44.

**[0033]** Figure 5 shows a fourth embodiment of a drain 50 according to the invention. This drain 50 resembles drain 20 according to figure 3. The same parts are therefore designated with the same reference numerals.

**[0034]** An elongate gutter 21 forming part of housing 22 is also provided in this drain 50. Arranged in this housing is a downward hanging baffle 23 whereby the housing is divided into a first chamber 24 and a second chamber 25.

**[0035]** An outlet pipe 28 likewise protrudes into second chamber 25 in the same manner as shown in figure 3. Outlet pipe 28 of drain 50 is short and suitable for coupling to a subsequent outlet pipe 51. The seal between outlet pipe 28 and outlet pipe 51 is ensured by a sealing ring 52.

**[0036]** An adjusting frame 53 is arranged in gutter 21 of drain 50. This adjusting frame 53 can be adjusted in both horizontal and vertical direction. It is hereby possible to allow the visible adjusting frame 53 to connect to floor tiles 54 and wall tiles 55.

**[0037]** Adjusting frame 53 has a part 56 which extends over the upper side 26 of second chamber 25. A cover 57 concealing sealing cap 27 in the inspection hole from view can be placed on this part 56.

## Claims

1. Drain, comprising:

   - a first chamber with an inflow opening on the upper side;
   - a second chamber placed adjacently of the first chamber, which second chamber is in liquid connection on the underside with the first chamber and wherein an outflow opening is arranged close to the upper side of the second chamber, **characterized in that** at least a top part of the upper side of the second chamber, with a sealable inspection hole arranged therein, lies at substantially the same height as the inflow opening in the upper side of the first chamber.

2. Drain as claimed in claim 1, wherein the first chamber comprises an elongate gutter, wherein the inflow opening is formed by the peripheral edge of the elongate gutter.

3. Drain as claimed in claim 1 or 2, wherein the dividing wall between the first chamber and the second chamber can be removed together with the top part in order to provide an inspection hole.

4. Drain as claimed in any of the foregoing claims, wherein an outlet pipe protrudes into the second chamber, which outlet pipe is sealed on the end surface and comprises the outflow opening of the second chamber in the peripheral wall.

5. Drain as claimed in claim 4, wherein the outflow opening is arranged in an upward facing part of the peripheral wall.

6. Drain as claimed in any of the foregoing claims, wherein an adjusting frame is arranged in the inflow opening.

**7.** Drain as claimed in claim 6, wherein the adjusting frame extends over the inspection hole.

**8.** Floor with a drain as claimed in any of the foregoing claims arranged therein, wherein the inflow opening and the part with the inspection hole lie substantially flush with the upper surface of the floor.

**9.** Floor as claimed in claim 8, wherein the drain lies against a wall and wherein tiles arranged on the wall stand on an edge of the inflow opening.

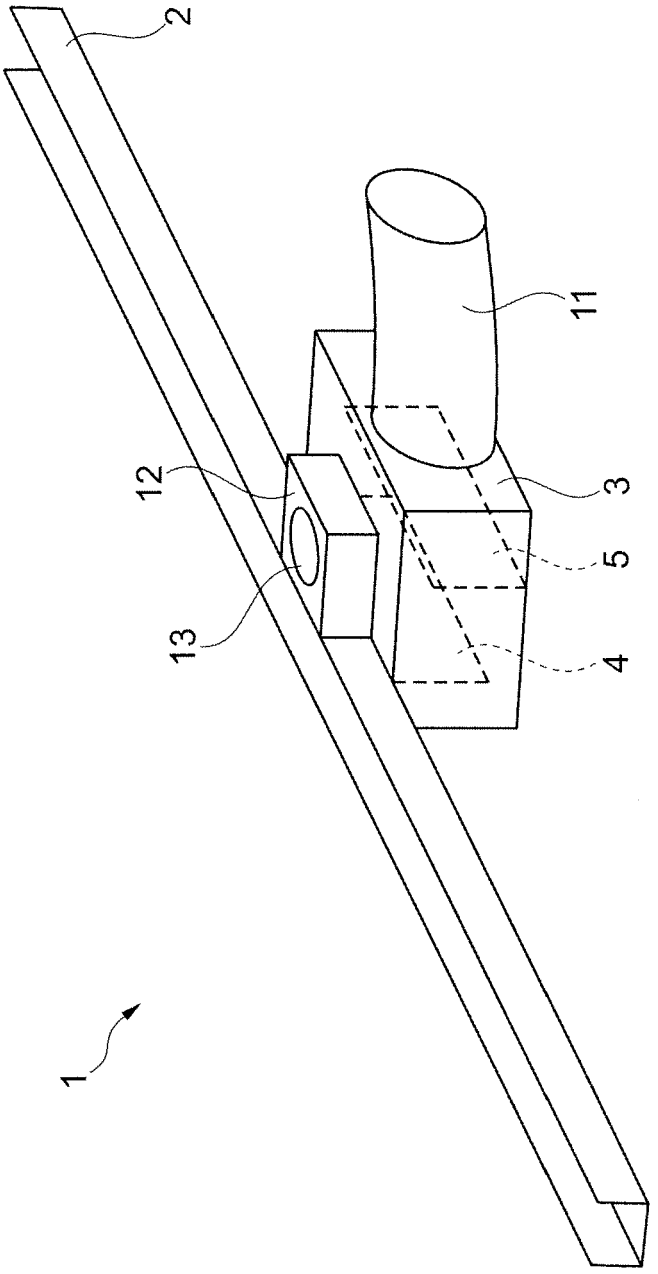


Fig. 1

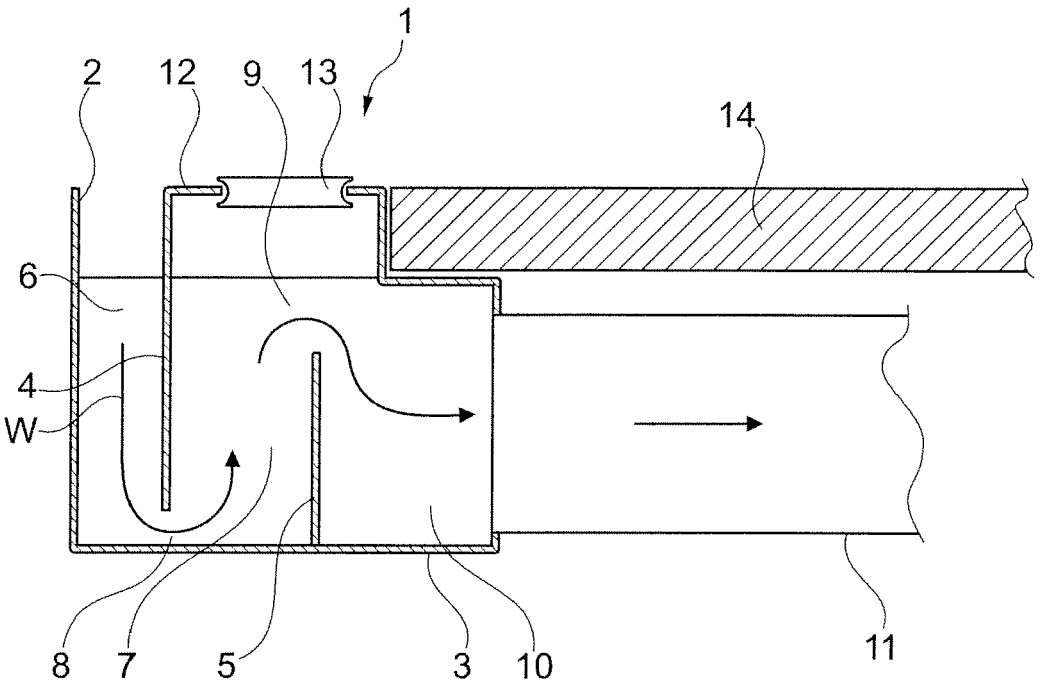


Fig. 2

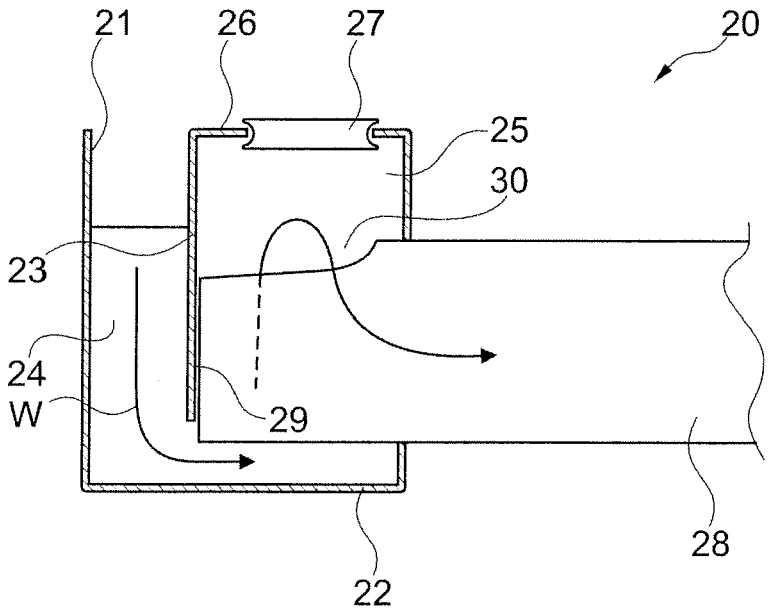


Fig. 3

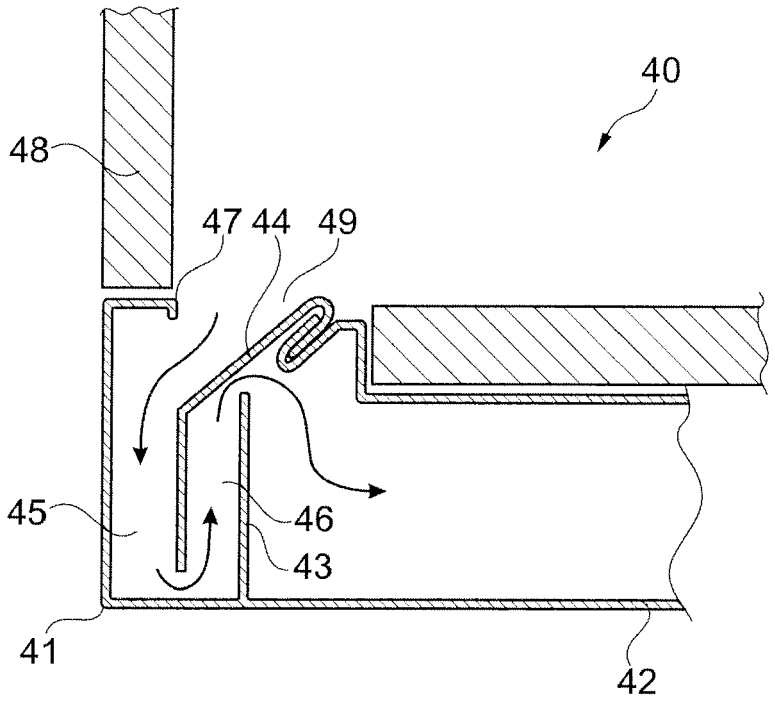
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Fig. 4

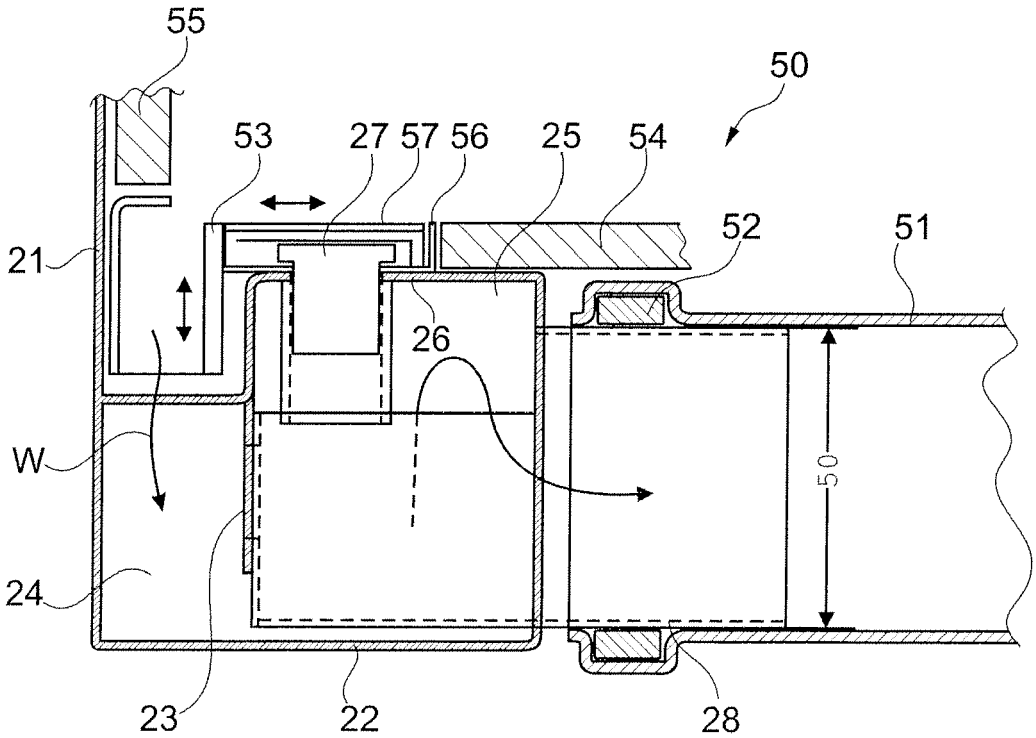
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Fig. 5

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# EUROPEAN SEARCH REPORT

Application Number
EP 10 15 2911

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
|---|---|---|---|
| X | EP 1 577 452 A (NIJHOF JERED [NL] QUICK DRAIN HOLDING B V [NL]) 21 September 2005 (2005-09-21) * paragraph [0047] - paragraph [0068]; figures * | 1-5,8,9 | INV. E03F5/04 |
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TECHNICAL FIELDS SEARCHED (IPC)

E03F

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 25 May 2010 | Van Bost, Sonia |

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 15 2911

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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25-05-2010

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82